

WHAT IS CLAIMED IS:

1. A coronary bypass conduit for implantation in a body of a patient comprising:

5 a hollow tube having an interior and an exterior and adapted to be positioned in a heart wall between a coronary artery and a heart chamber; and a section of blood vessel positioned within said interior of said tube and adapted to allow blood to flow therethrough.

2. The conduit of Claim 1, wherein the section of blood vessel contains at least one naturally occurring valve.

10 3. The conduit of Claim 1, wherein the section of blood vessel contains at least one artificial valve.

4. The conduit of Claim 1, wherein the blood vessel is a human vein.

5. The conduit of Claim 1, wherein the section of blood vessel is an autograft.

15 6. The conduit of Claim 1, wherein the section of blood vessel is an allograft.

7. The conduit of Claim 1, wherein the section of blood vessel is a xenograft.

20 8. The conduit of Claim 1, wherein the section of blood vessel is developed through tissue engineering techniques.

9. The conduit of Claim 1, wherein said heart chamber is a left ventricle.

10. The conduit of Claim 1, wherein said heart chamber is a right ventricle.

11. The conduit of Claim 1, wherein said heart chamber is a left atrium.

12. The conduit of Claim 1, wherein said heart chamber is a right atrium.

25 13. The conduit of Claim 1, wherein said coronary artery is a left anterior descending artery.

14. The conduit of Claim 1, wherein said coronary artery is a right coronary artery.

30 15. The conduit of Claim 1, wherein said coronary artery is a circumflex coronary artery.

16. The conduit of Claim 1, wherein said coronary artery is a posterior descending artery.

17. A bypass conduit for implantation in a body of a patient comprising:

a hollow tube having an interior and an exterior; and

a section of blood vessel positioned within said interior of said tube and adapted to allow blood to flow therethrough.

5 18. A method of shunting blood from a first heart chamber or blood vessel to a second heart chamber or blood vessel, comprising:

providing a conduit with two ends and an interior, and containing a section of blood vessel positioned within the interior of said conduit; and

10 placing said conduit such that one end of said conduit contacts said first heart chamber or blood vessel and the other end contacts said second heart chamber or blood vessel.

19. The method of Claim 18, wherein said heart chamber is a left ventricle.

20. The method of Claim 18, wherein said heart chamber is a right ventricle.

21. The method of Claim 18, wherein said heart chamber is a left atrium.

15 22. The method of Claim 18, wherein said heart chamber is a right atrium.

23. The method of Claim 18, wherein said coronary artery is a left anterior descending artery.

24. The method of Claim 18, wherein said coronary artery is a right coronary artery.

20 25. The method of Claim 18, wherein said coronary artery is a left circumflex coronary artery.

26. The method of Claim 18, wherein said coronary artery is a posterior descending artery.

25 27. A method of shunting blood from a heart chamber to a coronary artery, comprising:

providing a conduit with two ends and containing a section of blood vessel positioned within the interior of said conduit; and

placing said conduit within a heart wall such that one end of said conduit contacts said heart chamber and the other end contacts said coronary artery.

30 28. A coronary bypass conduit for implantation in a body of a patient comprising:

a hollow tube having an interior and an exterior and adapted to be positioned in a heart wall between a coronary artery and a heart chamber; and means for permitting blood to flow through said tube in predominantly one direction.

5           29.    The conduit of Claim 28, wherein the means for permitting blood to flow through said tube in predominantly one direction comprises a section of blood vessel.

30.    The conduit of Claim 29, wherein said blood vessel comprises a vein.

31.    The conduit of Claim 29, wherein the section of blood vessel is an autograft.

10           32.    The conduit of Claim 29, wherein the section of blood vessel is an allograft.

33.    The conduit of Claim 29, wherein the section of blood vessel is a xenograft.

15           34.    The conduit of Claim 29, wherein the section of blood vessel is developed through tissue engineering techniques.